

Council Policy Statement

Category: WIRELESS COMMUNICATION FACILITIES
Specific Subject: Review and Operation Guidelines for Wireless Communication Facilities

PURPOSE:

Wireless communication facilities, or WCFs, refer to the many facilities with antennas and supporting equipment that receive and transmit signals and together enable mobile or other “wire-free” communication and information services. Unlike ground-wired telecommunications, such as the land-based telephone system, wireless communication technologies, by their operational nature, require a network of antennas mounted at various heights and attached typically to buildings, structures and poles. A common name for a WCF is “cell site.”

WCF proposals to the city became commonplace in the mid-1990s. Since then, Carlsbad has processed dozens of new WCF applications and numerous permit renewals for existing facilities, all without benefit of specific review criteria. As the City’s population and the popularity and variety of wireless services grow, providers are expected to install more facilities to improve coverage and gain user capacity.

This policy’s purpose is to guide the public, applicants, boards and commissions, and staff in reviewing the placement, construction, and modification of WCFs. The goal is to assure WCFs in Carlsbad:

- Are reviewed and provided within the parameters of law.
- Are encouraged to locate away from residential and other sensitive areas, except as allowed by Section A. of this policy – Location Guidelines for the Placement of WCFs.
- Represent the fewest possible facilities necessary to complete a network without discriminating against providers of functionally equivalent services or prohibiting the provision of wireless services.
- Use, as much as possible, “stealth” techniques so they are not seen or easily noticed.
- Operate consistent with Carlsbad’s quality of life.

This policy applies to all commercial providers of wireless communication services. It does not apply to amateur (HAM) radio antennas and dish and other antennas installed on a residence for an individual’s private use.

BACKGROUND:

To secure the right to provide wireless services to a region, companies obtain airwave licenses that are auctioned by the Federal Communications Commission (FCC), the federal agency that regulates the telecommunications industry. The FCC mandates the licensees establish their service networks as quickly as possible.

In Carlsbad, there are three common types of wireless communication systems: Cellular, PCS (Personal Communications Services), and ESMR (Enhanced Specialized Mobile Radio). The table below provides the relevant similarities and differences between the three.

| ATTRIBUTES | SYSTEM | | |
|----------------------|--|------------|--|
| | Cellular | ESMR | PCS |
| Technology | Analog, converting to digital | Digital | |
| Network Coverage | Analog: Established Digital: Developing | Developing | |
| Frequency | 800 MHz | | 1900 MHz |
| Features | Telephone, call waiting, voice mail, caller ID, paging, e-mail, and Internet access <i>(Notes: Analog cellular does not provide all of these features. ESMR also offers dispatching and two-way radio. PCS also has video transmission ability.)</i> | | |
| Transmission | A network of interconnected WCFs carries signals across a city and beyond. Each WCF contains antennas that transmit and receive signals over a small geographic area known as a "cell." As the user travels from one cell to another, the signal is passed from one WCF to another in the next cell. | | |
| Cell Size Radius | Average 5 miles | | 0 – 1 mile |
| Antenna Types | Dish, Panel (or sector), and Whip | | |
| Antenna Support | Lattice towers, Monopoles, Building or Structure-Attached | | |
| Supporting Equipment | In structures generally under 500 square feet | | In cabinets about the size of vending machines |
| Provider | Verizon, AT&T, Cingular Wireless | Nextel | Sprint PCS |

Table Notes

- More facilities may be needed to complete a PCS network since its higher operating frequency limits the range of its antennas and consequently the size of its cells.
- The antennas for all three systems function on a line of sight transmission. Antennas need to be placed at specific heights in relation to one another in order to transmit and receive signals. As a result, height is a determining factor in the design and location of WCFs.
- Monopole antenna supports may be installed on buildings or on the ground.
- A single wireless communication facility may consist of two or more antennas and antennas of different types. A facility may also include the antennas and supporting equipment of more than one provider. This is known as "collocation." Collocation also refers to a WCF placed together with utility structures such as water tanks, light standards, and transmission towers.
- WCFs are usually unmanned and require maintenance visits once or twice each month.
- This table is based on current information that is subject to change.

POLICY:

REVIEW RESTRICTIONS:

The Federal Telecommunications Act of 1996 (TCA) preserves the City's ability to regulate the placement, construction, and modification of wireless communication facilities subject to the following restrictions, as contained in TCA Section 704.

- ***The City may not favor any carrier.***

Regulations may not unreasonably discriminate among competitive providers.

- ***The City may not prevent completion of a network.***

Regulations may not prohibit or have the effect of prohibiting the provision of wireless communication services.

- ***Applications are to be processed in a reasonable time.***

A city must act on an application for WCFs within a “reasonable” amount of time, roughly the same time as for any similar application.

- ***The City cannot deny an application because of perceived radio frequency health hazards.***

If federal standards are met, cities may not deny permits or leases on the grounds that radio frequency emissions are harmful to the environment or to the health of residents. However, local governments may require wireless carriers to prove compliance with the standards. The FCC has established procedures to enforce compliance with its rules.

- ***The City cannot deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change¹ the physical dimensions of such tower or base station.***

- ***A decision to deny an application must be supported by substantial evidence.***

A decision to deny a WCF application must be in writing and supported by substantial evidence contained in a written record.

HEALTH CONCERNS & SAFEGUARDS:

Possible health risks from exposure to the radio frequency (RF) electromagnetic fields generated by WCFs are a significant community concern. Accordingly, the FCC requires facilities to comply with RF exposure guidelines published in the Code of Federal Regulations (see 47 CFR §1.1307 and 47 CFR §1.1310). The limits of exposure established by the guidelines are designed to protect the public health with a very large margin of safety as they are many times below the levels that generally are accepted as having the potential to cause adverse health effects. Both the Environmental Protection Agency and Food and Drug Administration have endorsed the FCC’s exposure limits, and courts have upheld the FCC rules requiring compliance with the limits.

Most WCFs create maximum exposures that are only a small fraction of the limits. Furthermore, because the antennas in a PCS, cellular, or other wireless network must be in a line of sight arrangement to effectively transmit, their power is focused on the horizon instead of toward the sky or ground. Generally, unless a person is physically next to and at the same height as an antenna, it is not possible to be exposed to the established limits for RF exposure.

¹ The Federal Communications Commission defines a “substantial change” as:

- The mounting of a proposed antenna on the tower that would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
- The mounting of a proposed antenna that would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable.

The FCC requires providers, upon license application, renewal, or modification, to demonstrate compliance with RF exposure guidelines. Where two or more wireless operators have located their antennas at a common location (called “collocation”), the total exposure from all antennas taken together must be within FCC guidelines. Many facilities are exempt from having to demonstrate compliance with FCC guidelines, however, because their low power generation or height above ground level is highly unlikely to cause exposures that exceed the guidelines.

REVIEW AND APPROVAL GUIDELINES:

Carlsbad Municipal Code Section 21.42.010(16) allows WCFs in all zones with the approval of a conditional use permit (CUP) and subject to this policy. These guidelines should be followed in the review of conditional use permits for new wireless facilities as well as extensions and amendments to CUPs for existing installations.

A. *Location Guidelines For Placement of WCFs*

1. *Preferred Locations* – WCFs are encouraged to locate on existing buildings and structures. In addition, WCFs should locate in the following zones and areas, which are listed in order of descending preference:
 - a. Industrial zones.
 - b. Commercial zones.
 - c. Other non-residential zones, except open space.
 - d. Public right-of-way of roads adjacent to industrial and commercial zones and identified on the Circulation Plan contained in the Circulation Element of the city’s General Plan.
 - e. Public property (e.g., city facilities) not in residential areas.
 - f. Major power transmission towers in non-residential zones or areas.
 - g. Public and private utility installations (not publicly accessible) in residential and open space zones (e.g., water tanks, reservoirs, or the existing communication towers near Maerkle Reservoir).
 - h. Parks and community facilities (e.g., places of worship, community centers) in residential zones or areas.
 - i. Public right-of-way of roads adjacent to residential zones and identified on the Circulation Plan contained in the Circulation Element of the city’s General Plan.
2. *Discouraged Locations* – WCFs should not locate in any of the following zones or areas unless the applicant demonstrates no feasible alternative exists as required by Application and Review Guideline D.2.
 - a. Open space zones and lots (except as noted in Location Guideline A.1.).
 - b. Residential zones or areas (except as noted in Location Guideline A.1.).
 - c. Major power transmission towers in corridors located in/or next to a residential zone or area.
 - d. Environmentally sensitive habitat.
 - e. Public right-of-way of roads not identified on the Circulation Plan contained in the Circulation Element of the city’s General Plan.
 - f. On vacant land.
3. *Visibility to the Public* – In all areas, WCFs should locate where least visible to the public and where least disruptive to the appearance of the host property. Furthermore, no WCF

should be installed on an exposed ridgeline or in a location readily visible from a public place, recreation area, scenic area or residential area unless it is satisfactorily located and/or screened so it is hidden or disguised.

4. *Collocation* – Collocating with existing or other planned wireless communication facilities is recommended whenever feasible. Service providers are also encouraged to collocate with water tanks, major power transmission and distribution towers, and other utility structures when in compliance with these guidelines. The City must approve collocation applications unless the expansion adds significantly to the height or width of a facility.
5. *Monopoles* – No new ground-mounted monopoles should be permitted unless the applicant demonstrates no existing monopole, building, or structure can accommodate the applicant's proposed antenna as required by Application and Review Guideline D.3.

B. Design Guidelines

1. *Stealth Design* – All aspects of a WCF, including the supports, antennas, screening methods, and equipment should exhibit “stealth” design techniques so they visually blend into the background or the surface on which they are mounted. Subject to City approval, developers should use false architectural elements (e.g., cupolas, bell towers, dormers, and chimneys), architectural treatments (e.g., colors and materials), elements replicating natural features (e.g., trees and rocks), landscaping, and other creative means to hide or disguise WCFs. Stealth can also refer to facilities completely hidden by existing improvements, such as parapet walls.
2. *Equipment* – Equipment should be located within existing buildings to the extent feasible. If equipment must be located outside, it should be screened with walls and plants. If small outbuildings are constructed specifically to house equipment, they should be designed and treated to match nearby architecture or the surrounding landscape.
3. *Collocation* – Whenever feasible and appropriate, WCF design and placement should promote and enable collocation.
4. *Height* – WCFs should adhere to the existing height limitations of the zone in which they are located.
5. *Setbacks* – WCFs, including all equipment, should adhere to the building setback requirements of the zone in which they are located, with the following clarifications:
 - a. If on a site next to a residential zone, the WCF should be set back from the residential zone boundary a minimum distance equal to the above-ground height of the antenna.
 - b. If in a residential zone and in a public utility installation, park, or community facility, the WCF should be set back from the property boundaries of the utility installation, park, or community facility a minimum distance equal to the above-ground height of the antenna.
 - c. The Planning Commission may decrease or increase these setbacks if it finds such changes would improve the overall compatibility of the WCF based on the factors contained in Application and Review Guideline D.4.

6. *Building or Structure-Mounted WCFs:*

- a. Antennas and their associated mountings should generally not project outward more than 18 inches from the face of the building.
- b. Roof-mounted antennas should be located as far away as possible from the outer edge of a building or structure and should not be placed on roof peaks.
- c. If permitted, WCFs on residential buildings should only be allowed if disguised as a typical residential feature (e.g., a chimney, a dormer) and if all equipment is located inside, not outside, the building.

7. *Ground-mounted Monopoles:*

- a. All antennas should be mounted as close as possible to the monopole to improve facility appearance.
- b. The placement, screening, and disguise of the monopole should fit with the surrounding site design, architecture, and landscaping. Tree disguises, such as a “mono-palm,” may be acceptable depending on their quality and compatibility with landscaping nearby.
- c. Landscaping should be provided as necessary to screen, complement, or add realism to a monopole. Landscaping should include mature shrubs and trees. Some of the trees should be tall enough to screen at least three-quarters of the height of the monopole at the time of planting. Sometimes, landscaping may not be needed because of the monopole’s location or vegetation already nearby.
- d. When possible and in compliance with these guidelines, monopoles should be placed next to tall buildings, structures, or tall trees.

8. *Lattice Towers*

- a. New lattice towers should not be permitted in the City.
- b. On existing lattice towers, all antennas should be mounted as close as possible to the tower so they are less noticeable.

9. *Undergrounding* – All utilities should be placed underground.

10. *Regulatory Compliance* – WCFs should comply with all FCC, FAA (Federal Aviation Administration), and local zoning and building code requirements.

11. *WCFs in Public Right-of-Way*

- a. Antennas for facilities shall be attached to existing poles (e.g. street lights), substantially similar replacement poles in the same location, or vertical structures already located in the right-of-way. The installation of new poles or vertical structures shall only be permitted if it can be demonstrated that a new pole or structure is essential to providing coverage.
- b. The antenna assembly may not exceed the height of the existing pole.
- c. The use of an existing pole, replacement pole or other existing vertical structure shall require the authorization of the owner of the pole or structure. If a city street light or other city-owned structure is used, compensation shall be paid to the city as the owner. If a private pole or structure is used, a right-of-way permit shall be obtained from the city.
- d. Panel antennas shall be vertically mounted to a pole or structure in compliance with any applicable separation requirements and shall not exceed eight-inches in distance from

- the pole to the front side of the panel.
- e. No more than four Panel Antennas or two omni-directional Antennas shall be mounted on any utility pole or structure by any one provider.
- f. Antennas shall be painted to match the color of the surface of the pole on which they are attached or shall otherwise be screened to reduce their visibility.
- g. All other equipment associated with the facility shall be placed underground wherever possible. If it can be demonstrated that complete undergrounding of associated equipment is not possible, waiver requests involving landscaping or other screening techniques or visual mitigation will be considered. All equipment not placed underground shall be setback at least 2.5 feet from the back of the curb and within the parkway or greenway or 2.5 feet back from the edge of the sidewalk when it is contiguous to the curb.
- h. All equipment associated with the facility shall be located so as to minimize impacts to pedestrian access and vehicular site distance and safety.

C. *Performance Guidelines*

1. *Noise* – All equipment, such as emergency generators and air conditioners, should be designed and operated consistent with the City noise standards.
2. *Maintenance* – All facilities, related equipment, and landscaping should be maintained in good condition and free from trash, debris, graffiti, and any form of vandalism. All required landscaping should be automatically irrigated. Damaged equipment and damaged, dead, or decaying landscaping should be replaced promptly. Replacement of landscaping that provides facility screening should be, as much as possible, of similar size (including height), type, and screening capability at the time of planting as the plant(s) being replaced.
3. *Maintenance Hours* – Except in an emergency posing an immediate public health and safety threat, maintenance activities in or within 100 feet of a residential zone should only occur between 7 AM (8 AM on Saturdays) and sunset. Maintenance should not take place on Sundays or holidays.
4. *Lighting* – Security lighting should be kept to a minimum and should only be triggered by a motion detector where practical.
5. *Compliance with FCC RF Exposure Guidelines* – Within six (6) months after the issuance of occupancy, and with each time extension or amendment request, the developer/operator should submit to the Planning Director either verification that the WCF is categorically excluded from having to determine compliance with the guidelines per 47 CFR §1.1307(b)(1) or a project implementation report that provides cumulative field measurements of radio frequency (RF) electromagnetic fields of all antennas installed at the subject site. The report should quantify the RF emissions and compare the results with currently accepted ANSI/IEEE standards as specified by the FCC. The Planning Director should review the report for consistency with the project's preliminary proposal report submitted with the initial project application and the accepted ANSI/IEEE standards. If, on review, the Planning Director finds the project does not meet ANSI/IEEE standards, the City may revoke or modify the conditional use permit.

6. *Abandonment* - Any WCF that is not operated for a continuous period of 180 days will be considered abandoned. Within 90 days of receipt of notice from the City notifying the owner of such abandonment, the WCF owner must remove the facility and restore the site, as much as is reasonable and practical, to its prior condition. If such WCF is not removed within the 90 days, the WCF will be considered a nuisance and in addition to any other available remedy, will be subject to abatement under Chapter 6.16 of the Carlsbad Municipal Code. If there are two or more users of a single WCF, then this provision will not become effective until all users stop using the WCF. The provider or owner must give notice to the City of the intent to discontinue use of any facility before discontinuing the use.

D. *Application and Review Guidelines*

1. Besides the typical submittal requirements for a conditional use permit (including plans, landscape details, and color and material samples, as appropriate), all WCF applications should include the following items:
 - a. A description of the site selection process undertaken for the WCF proposed. Coverage objectives and the reasons for selecting the proposed site and rejecting other sites should be provided.
 - b. A description or map of the applicant's existing and other proposed sites.
 - c. A description of the wireless system proposed (e.g., cellular, PCS, etc.) and its consumer features (e.g., voice, video, and data transmissions).
 - d. Verification that the proposed WCF will either comply with the FCC's guidelines for human exposure to radio frequency (RF) electromagnetic fields or will be categorically excluded from having to determine compliance with the guidelines per 47 CFR §1.1307(b)(1). If WCFs are proposed for collocation, the verification must show the total exposure from all facilities taken together meets the FCC guidelines.
 - e. Color photo-simulation exhibits, prepared to scale, of the proposed WCF to show what the project would look like at its proposed location and from surrounding viewpoints. The Planning Director may waive the requirement to provide the exhibits if he determines they are unnecessary.
2. For WCFs proposed in a zone or area that is a discouraged WCF location as listed in Location Guideline A.2., the applicant should provide evidence that no location in a preferred zone or area as listed in Location Guideline A.1. can accommodate the applicant's proposed facility. Evidence should document that preferred zone or area locations do not meet engineering, coverage, location, or height requirements, or have other unsuitable limitations.
3. For proposed new ground-mounted monopoles, the applicant should also provide evidence to the City's satisfaction that no existing monopole, building, structure, or WCF site ("existing facility") could accommodate the proposal. Evidence should demonstrate any of the following:
 - a. No existing facility is located within the geographic area or provides the height or structural strength needed to meet the applicant's engineering requirements.
 - b. The applicant's proposed WCF would cause electromagnetic interference with the existing antennae array or vice versa.
 - c. The fees, costs, or contractual provisions required by the owner to locate on an existing facility or to modify the same to enable location are unreasonable. Costs exceeding new monopole development are presumed to be unreasonable.

- d. The applicant demonstrates to the Planning Commission's satisfaction that there are other limiting factors that render an existing facility unsuitable.
4. In considering a Conditional Use Permit for a WCF, the Planning Commission should consider the following factors:
 - a. Compliance with these guidelines.
 - b. Height and setbacks.
 - c. Proximity to residential uses.
 - d. The nature of uses on adjacent and nearby properties.
 - e. Surrounding topography and landscaping.
 - f. Quality and compatibility of design and screening.
 - g. Impacts on public views and the visual quality of the surrounding area.
 - h. Availability of other facilities and buildings for collocation.
5. Conditional Use Permits for WCFs should be granted for a period not to exceed ten years unless public safety reasons and/or substantial land use reasons, including limitations on the term of use imposed by the owner of the property, justify a shorter term. Upon a request for either an extension or an amendment of a CUP, the WCF should be reevaluated to assess the impact of the facility on adjacent properties, the record of maintenance and performance with reference to the conditions of approval, and consistency with these guidelines. Additionally, the City should review the appropriateness of the existing facility's technology, and the applicant should be required to document that the WCF maintains the technology that is the smallest, most efficient, and least visible and that there are not now more appropriate and available locations for the facility, such as the opportunity to collocate or relocate to an existing building.
6. Collocation. For the purposes of collocation, the following definitions apply:
 - (i) "Collocation facility" means the placement or installation of WCFs, including antennas, and related equipment, on or immediately adjacent to, a wireless telecommunications collocation facility.
 - (ii) "Wireless telecommunications facility" means equipment and network emergency power systems that are integral to providing wireless telecommunications services.
 - (iii) "Wireless telecommunications collocation facility" or "WTCF" means a wireless telecommunications facility that includes Collocation facilities.
 - a. A conditional use permit shall not be required for a proposed WCF Collocation facility which will be placed on a previously approved WTCF provided that:
 - (i) The new WCF Collocation facility is consistent with requirements for the existing WTCF installation; and
 - (ii) The modification of an existing wireless tower or base station does not physically change the dimensions of such tower or base station.
 - b. Approval of an application to construct or reconstruct a WCF wireless facility shall not require an escrow deposit for removal of the WCF Collocation facility or any component thereof.
 - c. Notwithstanding subsection (c) above, the City may require a performance bond or other surety or another form of security if the amount required is rationally related to the cost of removal.

